



## Complete Summary

---

### **GUIDELINE TITLE**

Undifferentiated vaginal bleeding/abdominal pain suggestive of ectopic pregnancy clinical pathway.

### **BIBLIOGRAPHIC SOURCE(S)**

Emergency Medicine Quality Council. Undifferentiated vaginal bleeding/abdominal pain suggestive of ectopic pregnancy clinical pathway. Portland (ME): Maine Medical Center, Department of Emergency Medicine; 2006 Aug. 5 p.

### **GUIDELINE STATUS**

This is the current release of the guideline.

## COMPLETE SUMMARY CONTENT

SCOPE  
METHODOLOGY - including Rating Scheme and Cost Analysis  
RECOMMENDATIONS  
EVIDENCE SUPPORTING THE RECOMMENDATIONS  
BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS  
QUALIFYING STATEMENTS  
IMPLEMENTATION OF THE GUIDELINE  
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT  
CATEGORIES  
IDENTIFYING INFORMATION AND AVAILABILITY  
DISCLAIMER

## SCOPE

### **DISEASE/CONDITION(S)**

Ectopic pregnancy

### **GUIDELINE CATEGORY**

Diagnosis  
Evaluation  
Screening

### **CLINICAL SPECIALTY**

Emergency Medicine  
Obstetrics and Gynecology  
Radiology

## **INTENDED USERS**

Advanced Practice Nurses  
Nurses  
Physician Assistants  
Physicians

## **GUIDELINE OBJECTIVE(S)**

To present a clinical pathway for the evaluation of women of childbearing age who present to the emergency department with abdominal pain and/or vaginal bleeding suggestive of ectopic pregnancy

## **TARGET POPULATION**

Women of childbearing age with abdominal pain and/or vaginal bleeding suggestive of ectopic pregnancy

## **INTERVENTIONS AND PRACTICES CONSIDERED**

1. Screening with urine pregnancy test
2. Quantitative beta chorionic human gonadotropin serum testing
3. Transvaginal ultrasound
4. Blood typing and screening
5. Serum hematocrit testing
6. Referral to specialists as necessary

## **MAJOR OUTCOMES CONSIDERED**

- Risk factors associated with ectopic pregnancy
- Sensitivity and specificity of diagnostic tests
- Incidence of heterotopic pregnancy

## **METHODOLOGY**

### **METHODS USED TO COLLECT/SELECT EVIDENCE**

Hand-searches of Published Literature (Primary Sources)  
Hand-searches of Published Literature (Secondary Sources)  
Searches of Electronic Databases

### **DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE**

The MEDLINE and CINAHL databases and the Cochrane Library were used to conduct a literature search to locate relevant articles. The search was restricted to articles published in the English language. Priority was given to articles reporting

results of original research although review articles and commentaries were also reviewed. Hand searches of relevant journals were conducted to locate relevant articles. Hand searches of the references of relevant articles were conducted to locate related articles.

## **NUMBER OF SOURCE DOCUMENTS**

Not stated

## **METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE**

Weighting According to a Rating Scheme (Scheme Given)

## **RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE**

**A1** = Evidence from well-designed meta-analysis or well-done systematic review with results that consistently support a specific action

**A2** = Evidence from one or more randomized controlled trials with consistent results

**B1** = Evidence from high quality evidence-based practice guideline

**B2** = Evidence from one or more quasi experimental studies with consistent results

**C1** = Evidence from observational studies with consistent results (e.g., correlational, descriptive studied)

**C2** = Inconsistent evidence from observational studied or controlled trials

**D** = Evidence from expert opinion, multiple case reports, or national consensus reports

## **METHODS USED TO ANALYZE THE EVIDENCE**

Systematic Review

## **DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE**

Not stated

## **METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Expert Consensus

## **DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS**

This guideline was developed from a systematic review and synthesis of current evidence on ectopic pregnancy. Research findings and other evidence, such as guidelines, clinical policies, and standards from professional organizations, case reports, and expert opinion, were critiqued, analyzed, and used as supporting evidence.

## **RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS**

Not applicable

## **COST ANALYSIS**

A formal cost analysis was not performed and published cost analyses were not reviewed.

## **METHOD OF GUIDELINE VALIDATION**

Peer Review

## **DESCRIPTION OF METHOD OF GUIDELINE VALIDATION**

This guideline was reviewed by experts knowledgeable of research on ectopic pregnancy and guideline development.

# **RECOMMENDATIONS**

## **MAJOR RECOMMENDATIONS**

The major recommendations for the emergency department management of women of childbearing age presenting with undifferentiated vaginal bleeding and/or abdominal pain suggestive of ectopic pregnancy are provided in the form of an algorithm, "Undifferentiated Vaginal Bleeding/Abdominal Pain Suggestive of Ectopic Pregnancy Clinical Pathway."

The grades of the strength and consistency of evidence (A1, A2, B1, B2, C1, C2, D) are defined at the end of the "Major Recommendations" field.

### **Definitions**

Quantitative beta human chorionic gonadotropin (beta-hCG): expressed in mIU/mL per the World Health Organization Third International Standard (International Reference Preparation)

### **Clinical Evaluation**

Data suggest that women with normal intrauterine pregnancies rarely experience pain or vaginal bleeding at below-threshold beta-hCG levels (1,000, 1,500, or 2,000 mIU/mL) and that women who do present to the emergency department (ED) with pain and/or vaginal bleeding and low beta-hCG levels are much more likely to have ectopic or abnormal intrauterine pregnancies (Kohn et al., 2003).

Therefore, a conservative approach to the evaluation of women of childbearing age presenting to the ED with abdominal pain and/or vaginal bleeding suggestive of ectopic pregnancy has been adopted.

- Women of childbearing age presenting to the ED with abdominal pain and/or vaginal bleeding will receive a urine test for pregnancy at triage ("Clinical policy," 2000. **Evidence Grade = B1**).
- Women with positive urine pregnancy tests who have not previously had an intrauterine pregnancy document by ultrasound will receive quantitative beta-hCG testing and a formal endovaginal ultrasound (Bloch, Baumann, & Strout, 2006; Dart, Kaplan, & Cox, 1997; Kaplan, et al., 1996. **Evidence Grade = C1**).
- Women with vaginal bleeding will also undergo blood type and screen for Rh as well as hematocrit evaluation (Royal College of Obstetricians & Gynaecologists, 2004; "Clinical policy," 2003. **Evidence Grade = B1**).
- Endovaginal ultrasound will not be dependent upon beta-hCG level (Gracia & Barnhart, 2001. **Evidence Grade = B2**)
- For women without intrauterine pregnancy observed by endovaginal ultrasound, an Obstetrics/Gynecology consult will be obtained (Tayal, Cohen, & Norton, 2004. **Evidence Grade = D**).

### **General Considerations**

- Always consider the possibility of heterotopic gestation, particularly in women who have utilized assisted reproductive technologies such as in vitro fertilization or gamete intrafallopian transfer (Dimitry et al., "Heterotopic pregnancy," 1990; Dimitry et al., "Nine cases of heterotopic pregnancies," 1990; Molloy et al., 1990. **Evidence Grade = D**).
- For women who have conceived naturally, the presence of an intrauterine pregnancy makes the likelihood of ectopic pregnancy extremely rare as the incidence of heterotopic gestation has been reported to be between 1 in 4,000 and 1 in 8,000 (Hann, Bachman, & McArdle, 1984; Reece et al., 1983; Bello et al., 1986; van Dam, Vanderheyden, & Uyttenbroeck, 1988; Vanderheyden & van Dam, 1987. **Evidence Grade = D**).
- It should be noted that several studies have shown a prevalence of normal ultrasound examination in 5% to 27% of women who actually have ectopic pregnancy (Stabile, Campbell, & Grudzinskas, 1988; Mahoney, et al., 1985; Nyberg et al., 1987. **Evidence Grade = C1**).

### **Definitions:**

### **Evidence Grading**

**A1** = Evidence from well-designed meta-analysis or well-done systematic review with results that consistently support a specific action

**A2** = Evidence from one or more randomized controlled trials with consistent results

**B1** = Evidence from high quality evidence-based practice guideline

**B2** = Evidence from one or more quasi experimental studies with consistent results

**C1** = Evidence from observational studies with consistent results (e.g., correlational, descriptive studies)

**C2** = Inconsistent evidence from observational studies or controlled trials

**D** = Evidence from expert opinion, multiple case reports, or national consensus reports.

### **CLINICAL ALGORITHM(S)**

A clinical algorithm is provided in the original guideline document for undifferentiated vaginal bleeding/abdominal pain suggestive of ectopic pregnancy clinical pathway.

## **EVIDENCE SUPPORTING THE RECOMMENDATIONS**

### **REFERENCES SUPPORTING THE RECOMMENDATIONS**

[References open in a new window](#)

### **TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS**

The type of supporting evidence is identified and graded for selected recommendations (see "Major Recommendations" field).

## **BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS**

### **POTENTIAL BENEFITS**

- Prevention of undetected ectopic pregnancy
- Prevention of ruptured ectopic pregnancy
- Decreased morbidity and mortality associated with ectopic pregnancy

### **POTENTIAL HARMS**

- Discomfort associated with phlebotomy
- Infection risk associated with phlebotomy
- Invasive nature of endovaginal ultrasound

## **QUALIFYING STATEMENTS**

### **QUALIFYING STATEMENTS**

- This evidence-based clinical pathway is only a guide. It is highly recommended that all hospital emergency departments develop a plan for the evaluation of women at risk for ectopic pregnancy based upon available

- resources. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or practice setting.
- This (algorithm) tool is intended to be a reference for clinicians caring for patients with undifferentiated vaginal bleeding or abdominal pain suspicious for ectopic pregnancy and is not intended to replace providers' clinical judgment. Some clinical problems may not be adequately addressed by this reference. Always assess for other causes of abdominal pain.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

The guideline developer's implementation strategy includes:

- Educational sessions on clinical pathway implementation
- Distribution of the clinical pathway to all emergency physicians and nurses
- Distribution of the clinical pathway to all radiology physicians and staff

### IMPLEMENTATION TOOLS

Clinical Algorithm

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better

### IOM DOMAIN

Effectiveness  
Timeliness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

Emergency Medicine Quality Council. Undifferentiated vaginal bleeding/abdominal pain suggestive of ectopic pregnancy clinical pathway. Portland (ME): Maine Medical Center, Department of Emergency Medicine; 2006 Aug. 5 p.

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

**DATE RELEASED**

2006 Aug

**GUIDELINE DEVELOPER(S)**

Maine Medical Center, Department of Emergency Medicine - Hospital/Medical Center

**SOURCE(S) OF FUNDING**

Maine Medical Center, Department of Emergency Medicine

**GUIDELINE COMMITTEE**

Emergency Medicine Quality Council: Ectopic Pregnancy Workgroup

**COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE**

*Work Group Members:* Rebecca B. Bloch, MD, Attending Physician Emergency Medicine; Michael R. Baumann, MD, Vice Chair and Medical Director Emergency Medicine; Tania D. Strout, RN, BSN, Research Nurse Emergency Medicine

**FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST**

Not stated

**GUIDELINE STATUS**

This is the current release of the guideline.

**GUIDELINE AVAILABILITY**

Electronic copies: Available from the [Maine Medical Center, Department of Emergency Medicine Web site](#).

Print copies: Available from Maine Medical Center Department of Emergency Medicine Research Office, 321 Brackett Street, Portland, ME 04102. Telephone: (207) 662-7049. Contact: Tania D. Strout, RN, BSN at [Strout@mmc.org](mailto:Strout@mmc.org).

**AVAILABILITY OF COMPANION DOCUMENTS**

None available

**PATIENT RESOURCES**

None available

**NGC STATUS**



This NGC summary was completed by ECRI on December 8, 2006. The information was verified by the guideline developer on December 12, 2006.

## **COPYRIGHT STATEMENT**

This NCG summary is based on the original guideline, which is subject to the guideline developer's copyright restrictions.

## **DISCLAIMER**

### **NGC DISCLAIMER**

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at <http://www.guideline.gov/about/inclusion.aspx>.

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.

© 1998-2008 National Guideline Clearinghouse

Date Modified: 9/15/2008

